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EXAMINER

CASTELLANO, STEPHEN J

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,427	Applicant(s) SKOVHOLT ET AL.	
	Examiner /Stephen J. Castellano/	Art Unit 3781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 8, 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Restriction

Claims 6 and 15-18 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and specie, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 23, 2008.

Claims 1-5, 7-14 and 19-21 will be treated according to their merits.

Drawing Objection

The amendment filed November 21, 2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: In the specification, on pages 4 and 11, the element 32 (a fluid tight weld seam) has the added language of "and/or glue."

Applicant is required to cancel the new matter in the reply to this Office Action.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the gluing together of metal plates to form a tight membrane as stated in claims 8 and 11 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Elected Fig. 5 shows the overlap and welding of adjacent steel plates.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

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must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim objection

Claims 8 and 11 are objected to because the gluing described in claim 8 has not been shown in a drawing.

112 Rejection

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 20 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 20 discusses that the inner wall of the tank has both an inner and an outer steel ring welded to the steel bottom. Only the inner steel ring was disclosed as part of the inner wall.

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The outer steel ring was disclosed as part of the outer wall not as part of the inner wall. **This is a new matter rejection.**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 7 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 is indefinite because it fails to further limit claim 1.

Claim 14 is indefinite because the limitation that the fluid tight barrier is formed by sheets of plastic material contradicts the metal plate construction of claim 1.

Art Rejections

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 7, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard (4366654) in view of Jean et al. (5586513) (Jean).

Bomhard discloses a tank for storing cryogenic fluids as it is capable of storing low temperature liquids. Bomhard comprises a base plate (5), a vertical wall (4), the vertical wall includes a fluid tight barrier (metal liner 11), an inner structural supporting wall (15), an outer structural supporting wall (4). Bomhard discloses the invention except for the metal plate being joined metal plates. Claim 1 has been changed to include thin, joined metal plate construction for

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the fluid tight barrier. Jean teaches a fluid tight barrier comprised of thin, joined metal plates. It would have been obvious to modify the metal plate construction to be thin, joined metal plates as this process allows a large tank structure to be fabricated from standard sized thin metal plate sheet with the sheet being joined by field welding on site rather than attempting to install a large, bulky, one-piece, fluid tight barrier.

Re claim 7, the sheets are joined or welded with fluid tight joints.

Re claim 12, the “formed by wood” limitation is a method limitation that doesn’t significantly effect the tank structure.

Re claim 14, Bomhard discloses that metal liner can be replaced with a fluid tight barrier of synthetic resin paint (see col. 3, lines 6-8). There is no structural difference between resin or plastic paint and sheets of plastic materials welded together along their edges.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Closner et al. (3926134) (Closner).

Bomhard discloses a tank for storing cryogenic fluids as it is capable of storing low temperature liquids. Bomhard comprises a base plate (5), a vertical wall (4), the vertical wall includes a fluid tight barrier (metal liner 11), an inner structural supporting wall (15), an outer structural supporting wall (4). Bomhard discloses the invention except for the multi-axially prestressing of the concrete. Claim 2 has been changed such that the inner wall element is made of multi-axially prestressed concrete. Closner teaches multi-axially prestressed concrete insofar as it is circumferentially prestressed by steel tendons and axially prestressed by tendons extending parallel to the longitudinal axis. It would have been obvious to modify the concrete

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construction of Bomhard's inner wall element to multi-axially prestressed as a matter of safety in reinforcing the concrete to resist tension loads caused by hoop stress and axial loads.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Jean as applied to claim 1 above, and further in view of Closner.

The combination discloses the invention except for the claim 3 change: the inner wall element is made of multi-axially prestressed concrete. Closner teaches multi-axially prestressed concrete insofar as it is circumferentially prestressed by steel tendons and axially prestressed by tendons extending parallel to the longitudinal axis. It would have been obvious to modify the concrete construction of Bomhard's inner wall element to multi-axially prestressed as a matter of safety in reinforcing the concrete to resist tension loads caused by hoop stress and axial loads.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Jean as applied to claim 1 above, and further in view of Hendriks (4069642).

Bomhard teaches a metal barrier as does Jean. Most metals have some degree of ductility. However, some metals are classified as brittle materials rather than ductile. Hendriks teaches an inner barrier 18, 19 made of Ni-steel or Al-alloy both ductile materials (see col. 2, lines 67 - col. 3, line 3). It would have been obvious to modify the metal barrier to be a ductile material to provide movement of the metal without tearing or rupture and a resulting perforation in the fluid barrier.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Jean as applied to claim 1 above, and further in view of Papanicolaou et al. (3948406)(Papanicolaou).

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Bomhard discloses the invention except for the structural layers being wood.

Papanicolaou teaches a tank for liquefied gases wherein a layer 32 of wood is used between on outer steel shell and an inner fluid barrier 33. It would have been obvious to provide wood in both the outer structural layer and the inner structural layer because of the excellent thermal insulation, lightness in weight and structural support that wood provides.

Claims 1, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1341892 (the British reference) in view of Jean.

The British reference discloses a tank for storing cryogenic fluids. The British reference comprises a base plate (22), a vertical wall (12), the vertical wall includes a fluid tight barrier (steel liner 36), an inner structural supporting wall (305), an outer structural supporting wall (46). The British reference discloses the invention except for the metal plate being joined metal plates. Claim 1 has been changed to include thin, joined metal plate construction for the fluid tight barrier. Jean teaches a fluid tight barrier comprised of thin, joined metal plates. It would have been obvious to modify the metal plate construction to be thin, joined metal plates as this process allows a large tank structure to be fabricated from standard sized thin metal plate sheet with the sheet being joined by field welding on site rather than attempting to install a large, bulky, one-piece, fluid tight barrier.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the British reference in view of Closner et al. (3926134) (Closner).

The British reference discloses a tank for storing cryogenic fluids as it is capable of storing low temperature liquids. The British reference comprises a base plate (5), a vertical wall (4), the vertical wall includes a fluid tight barrier (metal liner 11), an inner structural supporting

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wall (15), an outer structural supporting wall (4). The British reference discloses the invention except for the multi-axially prestressing of the concrete. Claim 2 has been changed such that the inner wall element is made of multi-axially prestressed concrete. Closner teaches multi-axially prestressed concrete insofar as it is circumferentially prestressed by steel tendons and axially prestressed by tendons extending parallel to the longitudinal axis. It would have been obvious to modify the concrete construction of the British reference's inner wall element to multi-axially prestressed as a matter of safety in reinforcing the concrete to resist tension loads caused by hoop stress and axial loads.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the British reference in view of Jean as applied to claim 1 above, and further in view of Closner.

The combination discloses the invention except for the claim 3 change: the inner wall element is made of multi-axially prestressed concrete. Closner teaches multi-axially prestressed concrete insofar as it is circumferentially prestressed by steel tendons and axially prestressed by tendons extending parallel to the longitudinal axis. It would have been obvious to modify the concrete construction of Bomhard's inner wall element to multi-axially prestressed as a matter of safety in reinforcing the concrete to resist tension loads caused by hoop stress and axial loads.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the British reference in view of Jean as applied to claim 1 above, and further in view of Nelson (3538661) and Lange (3559835).

The rejection of claims 8-11 is insofar as these claims are understood. The British reference ('892) shows a floor liner 32 movable on a support because of curved footing 34 that allows expansion and contraction. Lange (3559835) teaches horizontal metal plate 16 which

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terminates several vertical wall elements and provides welding 19. Nelson (3538661) teaches horizontal metal plate 12 which terminates several vertical wall elements. It would have been obvious to apply the teachings of Nelson and Lange by modifying the structure to include a metal plate bottom wall which supports the vertical wall elements and which vertical wall elements are welded to this metal plate bottom wall.

Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bomhard in view of Bettle et al. (4747513) (Bettle).

Bomhard discloses a tank for storing cryogenic fluids as it is capable of storing low temperature liquids. Bomhard comprises a base plate (5), a vertical wall (4), the vertical wall includes a fluid tight barrier (metal liner 11), an inner structural supporting wall (15), an outer structural supporting wall (4). Bomhard discloses the invention except for the metal plate being steel. Bettle teaches a fluid tight barrier comprised of steel plate. It would have been obvious to modify the metal plate material to be steel because of the strength, durability and availability of steel.

Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1341892 (the British reference) in view of Bettle.

The British reference discloses a tank for storing cryogenic fluids. The British reference comprises a base plate (22), a vertical wall (12), the vertical wall includes a fluid tight barrier (steel liner 36), an inner structural supporting wall (305), an outer structural supporting wall (46). The British reference discloses the invention except for the metal plate being steel. Bettle teaches a fluid tight barrier comprised of steel plate. It would have been obvious to modify the metal plate material to be steel because of the strength, durability and availability of steel.

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Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the British reference in view of Bettle as applied to claim 19 above, and further in view of Nelson (3538661) and Lange (3559835).

The rejection of claims 20-21 is insofar as these claims are understood. The British reference ('892) shows a floor liner 32 movable on a support because of curved footing 34 that allows expansion and contraction. Lange (3559835) teaches horizontal metal plate 16 which terminates several vertical wall elements and provides welding 19. Nelson (3538661) teaches horizontal metal plate 12 which terminates several vertical wall elements. It would have been obvious to apply the teachings of Nelson and Lange by modifying the structure to include a metal plate bottom wall which supports the vertical wall elements and which vertical wall elements are welded to this metal plate bottom wall.

Applicant's arguments with respect to claims 1-5, 7-14 and 19-21 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Stephen J. Castellano/ whose telephone number is 571-272-4535. The examiner can normally be reached on increased flexibility plan (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony D. Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J. Castellano/
Primary Examiner
Art Unit 3781

sjc